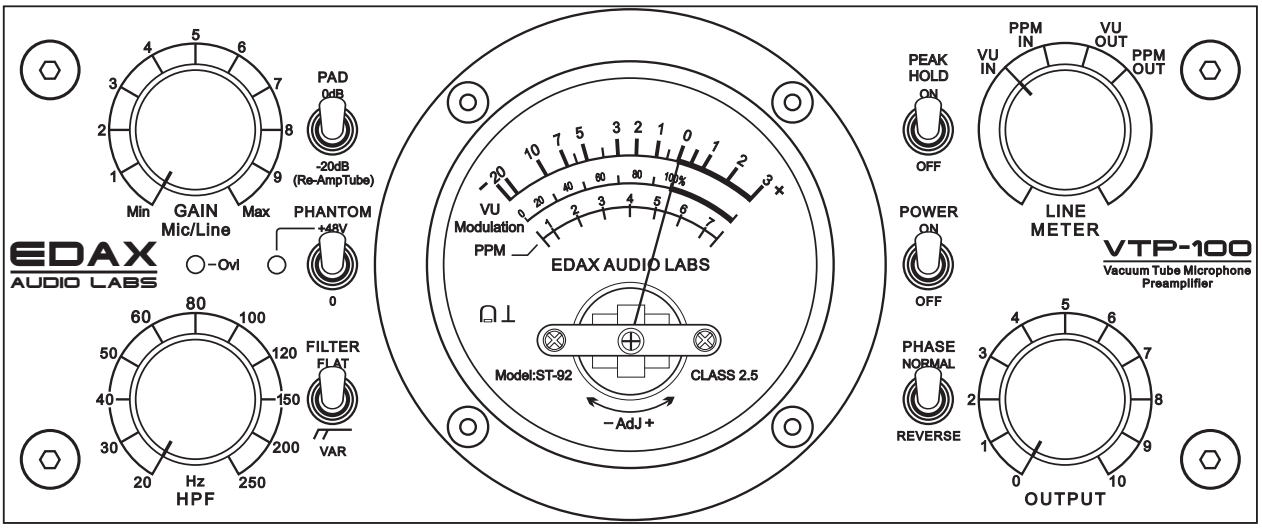
EDAX

AUDIO LABS

# OPERATING MANUAL

# VTP-100

## Vacuum Tube Microphone Preamplifier

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## SAFETY AND OPERATING PRECAUTION

### Important Information:

This symbol indicates the presence of dangerous voltage within the product enclosure that presents the risk of electric shock injury. When this symbol appears next to an operation discussed in this manual, only qualified technical personnel should perform that operation

.

This symbol indicates important operating or maintenance instructions that should be read carefully. Failure to observe these instructions could result in damage to the product or other property.

### WARNINGS:

**To reduce the risk of electric shock injury, do not remove the top cover or rear panel. Uninsulated dangerous voltage exists within the product's enclosure. Refer servicing to qualified personnel**

Do not defeat the earth ground connection in the AC power cable.
Do not operate this unit in the presence of rain, liquids or condensing moisture. Liquid entering the product enclosure presents the risk of electric shock injury. Do not touch the AC plug or enclosure with wet hands.
Do not defeat intended AC power connection polarization.
Do not use a damaged or excessively worn cord to connect this unit to AC power.

### CHECK LINE VOLTAGE SETTING

The VTP-100 has been set from the factory to operate at the voltage required for your part of the world. However, it's important to double-check this in order to ensure no damage will come to the unit if power is applied while the setting is incorrect.

### CAUTIONS:

**Severe damage may be caused to your unit if it is connected to an 230VAC/50Hz AC power if the voltage switch is setting in 115VAC position.**

**Important:**Failure caused by improper voltage application will not be covered under warranty.

This product is designed to operate in an ambient temperature environment not to exceed 50°C (122°F). Please ensure that this unit is mounted in such a way that vents are not blocked and ambient temperature does not exceed 50°C.

**INTRODUCTION**

The VTP-100 offers microphone and line inputs via Neutrik XLR/TRS combo jacks.
XLR for microphone and line input and the TRS jack to be used for instrument inputs(Vacumm Tube DI-BOX)
The VTP-100 preamp has switches for 48V phantom power,Hi pass filter, -20dB pad, phase reversal and PPM hold meter, LEDs for input overload and phantom indicators

Output discrete headphone amplifier with variable level and Re-Amp Tube HI-Z with trim adjustement that converts balanced +4dB line input levels to guitar levels.

The VTP-100's unique design yields a preamplifer that offers a huge dynamic range. It's ruler-flat frequency amazing response -0.75 dB 5Hz to 20KHz makes it the ideal preamplifier for such demanding applications as the live recording of classic music amongst others.

Thanks to its sophisticated discrete state-of-the-art input, transformerless output design and Class-A vacuum tube technology, the VTP-100 offers pristine sound, ultra low noise, super low distortion, excellent signal to noise ratio and a perfectly linear frequency response.

The transformerless input an output design's provides superior sound perfomance to that of the mic preamps (with input transformers) used in professional audio mixers.

Using Class A vacuum tube parallel topology with only the finest semiconductors in their architecture, gives you a preamplifier with sound characteristics that bypass, in perfomance, the preamp modules of the most expensive consoles in the world.

All the commutation functions are carried out through sealed internal relays, any type of FET, VCA or CMOS are employed, this allows it to maintain, at any given moment, a surprising dynamic range.

By being free of audio transformers in the audio signal, the in/out technology employed results in low distortion, and scarce phase deviation less than and improves linearity across the full frequency range.

It also provides the exceptionally low shelf noise and increased dynamic range necessary for highly critical studio recording

All of the components used have been selected meticulously by hand and measurements with propietary techniques.

The VTP-100 is the ideal preamplifier where stunning sound quality is required.
Sturdy construction and housing makes it ideal for use in live applications.

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FEATURES

* Pure class A Tube design with 4 cell parallel triodes.
* Fully balanced transformerless mic input and outputs.
* High headroom +32dB.
* Discrete output stage headphone amplifier.
* Hi-Z Reamp-Tube output with variable trim.
* High precision active balanced output circuit.
* High impedance instrument input Vacuum Tube Direct-Box
* 11 position  sealed rotary gain switch 4dB steps
* 11 position sealed rotary passive 12dB/Oct HP Filter (20-250Hz).
* High quality conductive plastic  output attenuator.
* Aluminium knobs.
* Ultra clean 48 Volt phantom power.
* LED peak meter show peak conditions.
* All signal routing with sealed  relays.
* Soft-start warm-up with  relay output muting.
* Large illuminated VU meter.
* Line and output VU/PPM read meter with PPM HOLD.
* Minimal internal signal wiring.
* Fully regulated high voltage,phantom,filament and dc power supplies.
* Gold plated Neutrik XLR input and output and jack connectors.
* Custom toroidal power transformer with shield for minimum hum.
* Dual voltage AC selector.
* Single-sided pc boards to minimize capacitive interaction.
* Sturdy construction and housing makes it ideal for use in live applications.

## INSTALLATION

### 5.1 Unpacking and Inspection

We recommend that you inspect your VTP-100 upon unpacking it from the factory shipping carton. In the unlikely event that the unit exhibits any physical damage, DO NOT connect it to the AC mains power, but contact your dealer immediately.
The shipping carton should contain the following items: the VTP-100 Preamp,an IEC 3 Prong power cord, and this operating manual.
We recommend that you keep the shipping carton and supports in the event that the unit must be shipped at some time in the future.

**DO NOT package the unit inpacking peanuts" or similar material** as it will settle during Shipping and damage will likely occur.

If original packing materials cannot be located, wrap the unit with a liberal amount of Plastic "bubble wrap" material extending at least 2" beyond the extremities of the VTP-100 enclosure.

### 5.2 Mounting

The VTP-100 can be mounted in any standard 19 inch (483mm) equipment rack using **MR-1**Mono (single channel) 19 inch rack mount kit or the **SR-2** Stereo (two channel) 19 inch rack mount kit
If the VTP-100 is mounted in a mobile rack or road case, it is important that the rear of the chassis is supported to prevent possible damage from mechanical shock and vibration. Excessive shock and vibration can cause damage or premature failure of the vacuum tubes, or cause them to shaken loose from their sockets.
Please avoid rough handling.

### 5.3 Ventilation

For proper operation, it is **very** important that adequate ventilation is provided. Vacuum tubes produce a significant amount of heat that must be removed from inside the chassis. The top panel vents should never be blocked in any way
We recommend that you provide adequate ventilation so that the air temperature surrounding the unit does not exceed 55°C (122°F). If multiple units are to be mounted in a poorly ventilated rack or travel case, a 1 3/4" blank space should be located after every two units (two units mounted together, blank space, two more units, etc.).

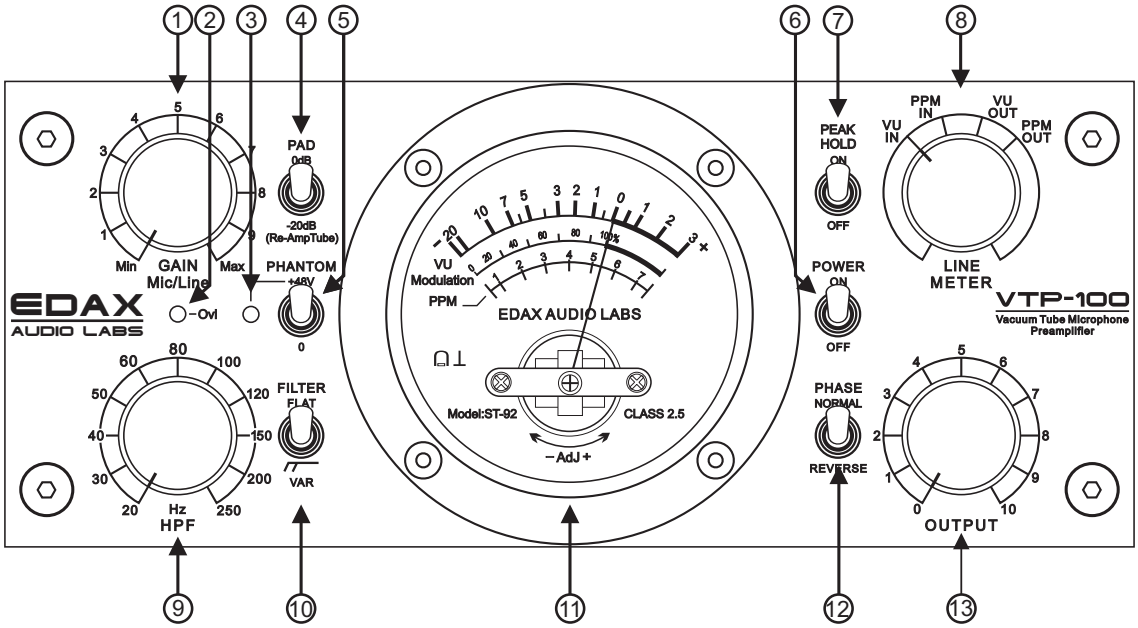
### 5.4 Power Requirements

The VTP-100 is equipped with a 3-prong IEC power connector and detachable cord.
Never operate the VTP-100 with the ground on the power cord defeated.
This unit operates from 115V/60 Hz and 230V/50Hz.
The ac fuse and the voltage switch are accessibles from the rear panel.
To check or replace the fuse, make sure the unit is unplugged.

### 5.5 Servicing

Other than changing the tubes, the user should not attempt to service the VTP-100 beyond that described in this manual. Never remove the covers or attempt to replace the tubes until the unit has been disconnected from the ac power source, and all circuits inside have been allowed to discharge for a period of at least 30 minutes.
Since potentially lethal voltages are present inside the unit, it should only be opened by Qualified service personnel. Refer all servicing, or any questions about servicing, to Edax Audio Labs.

**FRONT PANEL**




1) **GAIN Mic/Line:** An 11 position rotary switch that controls the gain of the discrete input stage.

2) **Ovl led:** The Red Led iluminate when the input level exceeds the maximum XLR input level which is 3 dB below the overload point.

3) **Phantom led:** The Yellow Led iluminate when the phantom power is on.

4)**PAD:** Selects between the MIC input (via the XLR input connectors on the rear panel) and Line or DI input signals (via the rear Combo Neutrik 1/4" input jacks).

5) **+48V:** Supplies 48 volts to the XLR inputs for condenser microphones requiring phantom power. Avoid selecting phantom power if you are using a dynamic, ribbon or tube mics.

6) **POWER:** The meter light indicates that the unit is on.

7) **PPM HOLD:** When the switch meter are in PPM mode allows to freeze the meter needle at maximum peaks.

8) **METER:** Allows select VU/PPM input and VU/PPM output modes.
Important:The meter is balanced connected direct to XLR IN/OUT connectors and the measurement is in line levels Factory Cal:0dB Ref:+4dBu

9) **HPF:** An 11 position rotary switch that provides 12dB/octave low frequency rolloff with 11 user-selectable turnover frequencies 20 to 250Hz.

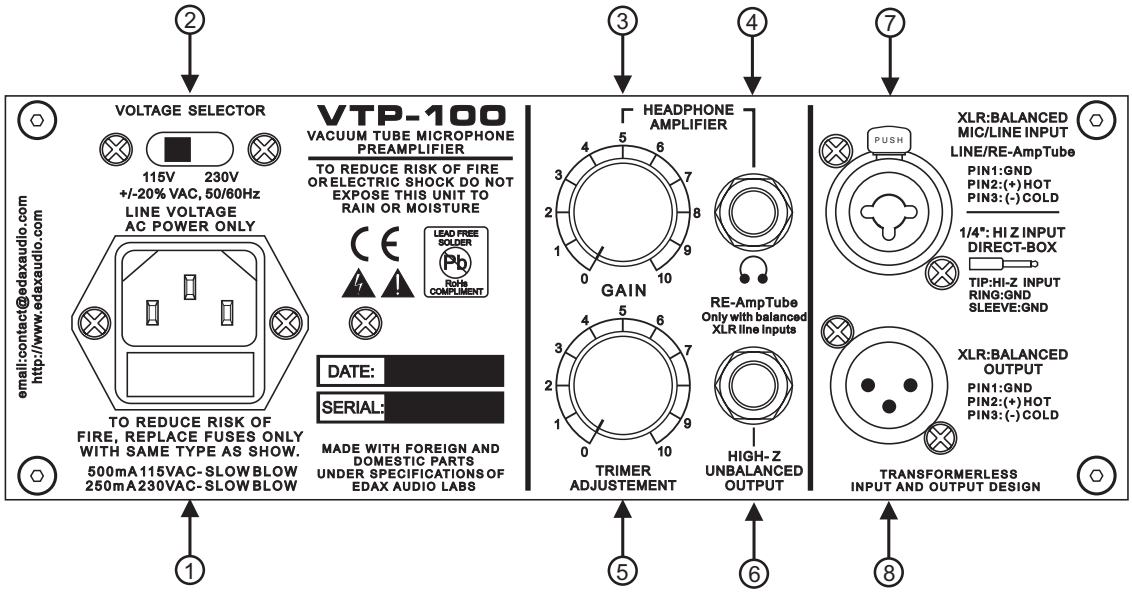
10) **HPH:** Filter Switch

11) **METER INSTRUMENT**

12) **PHASE:** Phase reverse switch,where '+' is normal phase (input pin 2 hot), and '-' is inverted phase (input pin 3 hot).

13) Output level control.

## REAR PANEL CONTROL




1)Main connector & fuse

2) AC line voltage selector.

3) Headphone output level

4) Headphone output

5) Re-AmpTube trim output level

6) Re-AmpTube Hi-Z output

7) XLR:Mic/Line(Re-AmpTube) input
1/4” Jack DIRECT-BOX Input

8)Transformerless balanced output.

## PREAMPLIFIER OPERATION

### 8.1 Turning the power ON

The power switch is located on the VTP-100 front panel.Turn on the power switch, the meter iluminates red.
The VTP-100 has a 30 seg Soft-start warm-up with relay output muting after this time the unit are ready to work.

### 8.2 Setting the gain

First, turn the gain control fully counter-clockwise and check that the 48V phantom power is off.
Connect a microphone and then turn on the phantom power if required.
Simply increase the Gain Mic/Line until the optimum level is reached with the output level in 5.
If the peak indicator flashes red excessively with the gain control in the fully counterclockwise position or engage the -20dB attenuator.
The input meter indicate only line levels,set the meter in VU or PPM output reading to check optimum level output.,use the PPM HOLD to view maximum peaks if it is desire.

### 8.2 Using the VTP-100 as a DI-BOX

The 1/4" jack combo connector on the rear panel is used as vacuum tube direct box.
This input has an impedance of 1M ohms and can accommodate a wide variety of high impedance input sources, including bass guitar, keyboards, electric guitars, piezo transducers etc.
In this mode, the GAIN Mic/Line that controls the gain of the discrete input stage ,the -20 dB Pad, the Phantom power and the input line meter are not available.
The HPF,phase reverse switch,the level output, the output meter and the PPM switch are active.

### 8.3 Using the VTP-100 as a Re-AmpTube

The 1/4"jack Hi-z output connector on the rear panel is available only with the Pad in -20d (Re-Amp Tube) in this mode all the function are active, the trimer adjustement control is designed to mimic Hi-Z guitar levels.
The VTP-100 in this mode convert +4dB line level outputs to guitar hi impedance level, to can connecting to guitar input amplifiers,
The Re-Amp Tube mode pass the audio signal thru a Class - A tube amplifierthis is very usefull to increase the 2°harmonic content response.
A guitar player can record a flat direct guitar track to tape or hard disk and Re-Amp Tube later into any instrument amplifier.

## REPLACING THE TUBES

The vacuum tubes become very hot once the unit has been turned on, and they should not be touched until they have cooled to room temperature.

There are a large variety of ECC82/12AU7s available, each type has slightly different internal structure and design.
Consequently, each type has its own sonic signature.
For the design of the VTP-100 we have chosen an especial tube modele this gives to the VTP-100 its special sound characteristic.

When you need to replace the vacuum tubes use allways original EDAX tubes.

All vacuum tubes have a limited life due to reduced electron emission from the oxide coating on the cathode and/or a buildup of impurity gases is the bulb. Due to the hi quality of the tubes in the VTP-100 the life is estimated to be several years.

**If you notice the sound quality deteriorating - higher distortion, muddiness, or microphonic behavior - it's time to change the tubes.**

**Allways** we recommend changing the 2 tubes at once.
If you are uncomfortable with replacing the tubes yourself, please have It done by qualified service personnel.

1) Unplug the VTP-100 and wait at least 30 minutes for the high voltage in the unit to discharge and for the tubes to cool to room temperature.

2) Only remove the top cover by removing the seven #8-32 Phillips-head screws. It is not necesary to remove the bottom cover.

3) Note the position of the two tubes (V1-V2) in the porcelain sockets The tubes are ECC82/12AU7

4) Remove each tube and replace with the new one.

5) Reinstall the top cover and screws.

SPECIFICATIONS

Input Impedance(microphone): 2k2 ohm,nominal.

Input Impedance(direct input):1Mohms (Instrument).

Maximum input level:+23dBu into 10Kohms.

Maximum input level(DI-BOX):+10dBu.

Maximum output level:+32dBu into 10Kohms.

Output impedance:47ohms x 2.

Frequency Response: -1.0dB 20Hz and 20kHz with 10Kohm load.

Noise: EIN than -125dBu with 150 ohm input load, unweighted.

Distortion: THD+N less than 0.02%, +35dB gain

Meter: Line input VU/PPM and VU/PPM output level and PPM Hold.
(Factory Cal (In and Outs) = +4dBu)

Phantom Power:+48Vdc applied to pins 2 and 3, +/- 1Vcc.

Mic Pad: -20dB attenuation.

Mic Phase switch: inverts the phase 180 degrees at the transformerless output.

Phase desviation: 0.2% at 2KHz, 0.4 at 20KHz ,+20 dBu output.

Hi Pass Filter : Passive 12 dB/octave rolloff from 20-250Hz in 11 steps.

Polarity: input and output XLR connectors are pin 2 hot.

Vacuum Tubes: (2) ECC82/12AU7,4 cell.

Power: 100VAC to 240VAC, 50/60Hz, selectable.

Power consuption:40 watts maximum.

Power Supplies: All internal voltage  fully regulated with soft-start warm-up.

Dimensions: 2U enclosure, 8.5" x 3.5" x 12.5" (21.6 x 8.9 x 29.5 cm).

Weight: 3.93Kg.

Net Weight: 4.8Kg.

Notes: 0 dBu = 0.775 Vrms.

All noise measurements are unweighted, 20 - 20,000 Hz bandwidth.
All specifications are subject to change without notice.

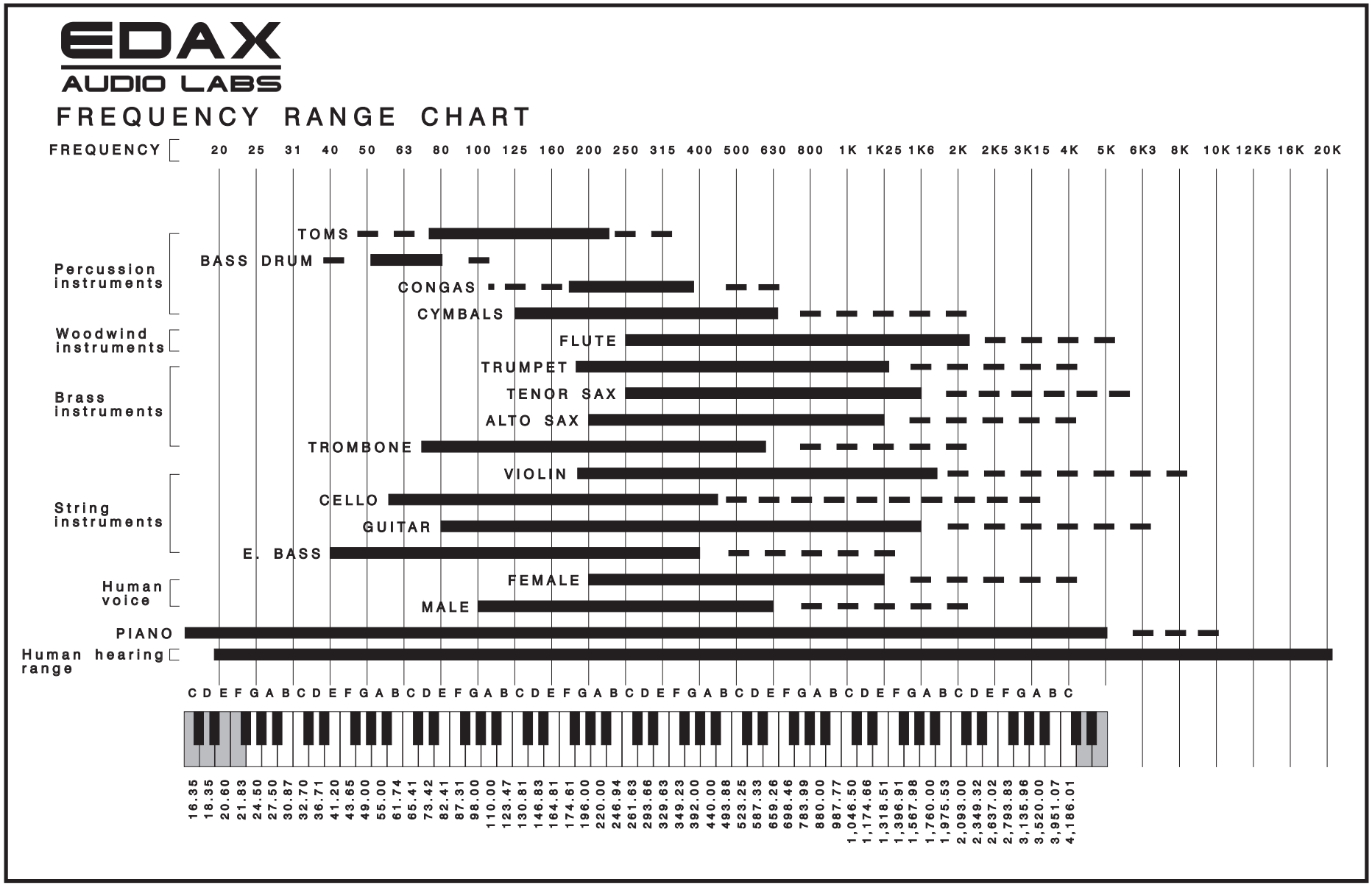
## WARRANTY

Edax Audio Labs warrants to the first purchaser of a new VTP-100 Vacuum tube preamplifier that the unit is free of manufacturing defects in materials and workmanship fora period of one (1) year from the date of purchase. Edax Audio Labs sole obligation under this warranty shall be to provide, without charge, parts and labor necessary to remedy defects, if any, which appear within one (1) year from the date of purchase. All warranties expressed or implied made byEdax Audio Labs, including warranties of merchantability and fitness, are limited to the period of this warranty. Edax Audio Labs is not responsible for indirect, incidental or consequential damages arising from the use or failure of this product, including injury to persons or property.

This warranty does not cover damage due to: misuse, abuse, modification, accident or negligence. The warranty does not apply if the unit is repaired or altered by persons unauthorized by Edax Audio Labs in such a manner as to injure, in Edax Audio Labs sole judgment, the performance, stability or reliability of the unit. The warranty does not apply if the unit is connected, installed or used otherwise than in accordance with the instructions furnished byEdax Audio Labs There is no warranty on vacuum tubes.

If the equipment requires warranty repair, return authorization must be obtained from Edax Audio Labs prior to shipment. Equipment should not be shipped to Edax Audio Labs until return authorization and the proper shipping address is obtained from us.
The equipment (with all its components parts and connecting cables) must be suitably packaged, including a note with the owner's name, address, telephone number and a description of the reason for return. The owner pays two-way shipping , and we suggest that the shipment be insured for its full value.

This limited warranty is in lieu of all other warranties, expressed or implied, and no representative or person is authorized to represent or assume for us any liability in connection with the sale of our products than set forth herein.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FREQUENCY RANGE CHART
FREQUENCY
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Percussion instruments
TOMS
BASS DRUM
CONGAS
CYMBALS
Woodwind instruments
FLUTE
Brass instruments
TRUMPET
TENOR SAX
ALTO SAX
TROMBONE
String instruments
VIOLIN
CELLO
GUITAR
E. BASS
Human voice
FEMALE
MALE
PIANO
Human hearing range
C D E F G A B C D E F G A B C D E F G A B C D E F G A B C D E F G A B C D E F G A B C D E F G A B C D E F G A B C D E F G A B C
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